

Amendments to Claims

1. **(Previously Amended)** A fuel cell stack having:
a plurality of fuel cells disposed between current-collecting end plates and
having water therein; and
at least one reactant gas manifold;
5 characterized by the improvement comprising:
each said at least one reactant gas manifold comprising either (a) a single
wall, with a VIP or GFP disposed inside or outside said single wall, or (b) a double
wall forming a chamber, said chamber containing a vacuum, a low thermal
conductivity gas, a VIP or a GFP; and
10 an insulator panel disposed on an external surface of each of said end plates,
each insulator panel comprising either (a) a hollow chamber containing a vacuum or
a low thermal conductivity gas, or (b) a VIP, or (c) a GFP.
2. **(Previously Amended)** A fuel cell stack according to claim 1 wherein:
said fuel cell stack has a plurality of said reactant gas manifolds; and
the insulation provided by said manifolds and said insulator panels is
sufficient so that the water in said stack is not totally frozen when said fuel cell
5 stack is inoperative in an ambient environment for greater than fifty minus-degree-
days.
3. **(Previously Amended)** A fuel cell stack according to claim 1 wherein:
said fuel cell stack has a plurality of said reactant gas manifolds; and
the insulation provided by said manifolds and said insulator panels is
sufficient so that the water in said stack is not totally frozen when said fuel cell
5 stack is inoperative in an ambient environment for about 100 minus-degree-days.
4. **(Previously Amended)** A fuel cell stack according to claim 1 wherein:

5 said fuel cell stack has a plurality of said reactant gas manifolds; and
the insulation provided by said manifolds and said insulator panels is
sufficient so that the water in said stack is not totally frozen when said fuel cell
stack is inoperative in an ambient environment for about 150 minus-degree-days.

5. **(Currently Amended)** A fuel cell stack comprising:
a plurality of fuel cells disposed between current-collecting end plates; and
an insulator panel disposed on an external surface of each of said end plates,
each insulator panel comprising either (a) a hollow chamber containing a vacuum or
5 a low thermal conductivity gas, or (b) a VIP[(, or (c)] or a GFP.

6. **(Original)** A fuel cell stack according to claim 5 wherein said insulator
panels comprise either (a) a VIP or (b) a GFP with an external film of (c) plastic or
(d) resin/fiberglass composite for enhanced structural integrity.

7. **(Currently Amended)** An insulated reactant gas manifold for a fuel cell
stack comprising either (a) a single wall, with a VIP or GFP disposed inside or
outside said single wall, or (b) a double wall forming a chamber, said chamber
containing a vacuum, a low thermal conductivity gas, a VIP or a GFP.

8. **(Original)** A manifold according to claim 7 wherein said double wall
forming a chamber comprises a layer of either (c) plastic or (d) resin/fiberglass
composite on the surfaces of (e) a VIP or (f) a GFP for enhanced structural integrity.